**ELECTRICAL COMPONENTS – DIODE**

Diode – it is a two terminal electrical component which conducts electric current in unidirectional

Symbol: anode +ve cathode – ve

Current flows from +ve to -ve in conventional current but in practica; it flows from -ve to +ve

Forward bias – (-ve to +ve)

Reverse bias – (+ve to -ve) – Zener diode

Body

Leds stripe

Inside the diode there is a valence band and conduction band

Electrons move from valence band to conduction band

When the distance between the valence band and conduction band

* Is less – acts as a conductor
* Is high – acts as an insulator
* When minimal and requires external force for movement – acts as semiconductor

In semiconductors the threshold voltage differs for different elements doped with (e.g: for Si is 0.7V and for Ge is 0.3V)

Doping – addition of impurities to a pure semiconductor to maintain electrical conductivity

P type semiconductor – contains holes

N type semiconductor – contains electrons

Depletion region – the junction where the electrons and holes diffuse and recombine by neutralizing the charge while leaving behind the fixed charged ions

Rectifier – converts AC to DC

It is formed using diodes

Half – wave rectifier:

It is not effective as it takes only the positive half of the cycle while leaving behind the negative half of the cycle.

Full – wave rectifier:

It considers both half of the cycle.

